Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

CLAIM AMENDMENTS:

Claim 1 (currently amended): A rack for use in a compound handling system for handling a multiplicity of tubes containing aliquots of chemical or biological samples, which comprises:

a peripheral frame, said frame having a top side and a bottom side;

grid-like separation walls that define a plurality of rows of storage compartments within said frame, each compartment being configured and dimensioned <u>for receiving a substantial part of</u> ~~to receive~~ a sample tube, ~~containing a chemical or biological sample in aliquotted form,~~ said storage compartments being adjacent to each other and defined by separation walls between them, each of said storage compartments having an inner wall and ~~being open at the top side of the frame and open~~ <u>a top opening at the top side of the frame and a bottom opening</u> at the bottom side of the frame so that a sample tube is insertable into the storage compartment from ~~either~~ <u>both</u> the top side of the frame ~~or~~ <u>and</u> the bottom side of the frame and is removable from the storage compartment ~~from either~~ <u>through both</u> the top <u>opening and the bottom opening of the</u> storage compartment ~~side of the frame or the bottom side of the frame~~,

<u>the cross-section of each of said storage compartment being constant over the entire length of the storage compartment, whereby a sample to be inserted into the storage compartment through the top opening thereof can be removed from the storage through the bottom opening of the storage compartment,</u> and

means for retaining a sample tube within each of said storage compartments, said retaining means comprising a projection of the inner surface of the wall of each storage compartment, said projection being suitable for snapping between two ridges of the outer wall of a sample tube that is positioned within said compartment.

Claim 2 (previously presented): A rack according to claim 1, wherein each of said compartments suitable for receiving and holding an entire sample tube.

Claim 3 (original): A rack according to claim 1, wherein each of said storage compartment is rectangular.

Claims 4-5 (canceled)

Claim 6 (new) A system for handling a plurality of sample tubes, said system comprising

(a) A rack for use in a compound handling system for handling a multiplicity of tubes containing aliquots of chemical or biological samples, which comprises:

a peripheral frame, said frame having a top side and a bottom side;

grid-like separation walls that define a plurality of rows of storage compartments within said frame, each compartment being configured and dimensioned for receiving a substantial part of a sample tube, said storage compartments being adjacent to each other and defined by separation walls between them, each of said storage compartments having an inner wall and a top opening at the top side of the frame and a bottom opening at the bottom side of the frame so that a sample tube is insertable into the storage compartment from both the top side of the frame and the bottom side of the frame and is removable from the storage compartment through both the top opening and the bottom opening of the storage compartment,

the cross-section of each of said storage compartment being constant over the entire length of the storage compartment, whereby a sample to be inserted into a storage compartment through the top opening thereof can be removed from the storage through the bottom opening of the storage compartment, and

means for retaining a sample tube within each of said storage compartments, said retaining means comprising a projection of the inner surface of the wall of each storage compartment, said projection being suitable for snapping between two ridges of the outer wall of a sample tube that is positioned within said compartment; and

(b) a plurality of sample tubes each of which contains an aliquot of a chemical or biological sample, each of said sample tubes having a shape that fits into a storage chamber of said rack and that enables insertion of the sample tube into one of said storage compartments from both the top side of the frame and the bottom side of the frame with one and the same

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orientation of the sample tube with respect to the frame, the outer wall of each of said sample tubes having two annular ridges located in planes which are parallel to each other and normal to the length axis of the sample tube.

Claim 7 (new) A system according to claim 6, wherein each of said compartment is suitable for receiving and holding an entire sample tube.

Claim 8 (new) A system according to claim 1, wherein each of said storage compartment is rectangular.